

REMARKS/ARGUMENTS

Response to Examiner's Response to Arguments in Final Office Action

Examiner has considered Applicant's arguments filed February 29, 2008 but have found the arguments not sufficiently persuasive. More specifically, Examiner states that the recitation "by using a water jet" has not been given patentable weight because the recitation occurs in the preamble. In addition, Examiner states that a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. Examiner states that the prior art still reads on the presently claimed invention. Furthermore, Examiner is not persuaded by Applicant's arguments for non-obviousness filed February 29, 2008.

Applicant currently submits amendments to the claims in light of Examiner's comments. Applicant cancels apparatus claims 1-16 and method claims 20-21. Applicant additionally adds new claims 31-42, which are directed to an apparatus for cutting a packaged substrate, and new claims 43-47, which are directed to a method for cutting a packaged substrate. Applicant also amends method claims 17-19 and 22-30. Applicant submits that the amended method claims, and the newly added apparatus and method claims are novel and non-obvious in accordance with 35 U.S.C. 102 and 35 U.S.C. 103. In addition, Applicant submits that the amendments to the claims are supported by the patent specification as filed. Further submissions in support of novelty and non-obviousness are provided below.

Response to Claim Rejections Under 35 U.S.C. 102

Examiner has rejected previously pending claims 1, 7-12, 15-19, 24-26, 28 and 30 under 35 U.S.C. 102(b) as being anticipated by Kazuma et al (EP 1028455A2). More specifically, Examiner states that the recitation "for singulating at least one packaged substrate into a plurality of packaged semiconductor devices by using a water jet" has not been given patentable weight because the recitation occurs in the preamble. In addition, Examiner states that claim limitation that employs phrase of the type "adapted to" are typical of claim limitations, which may not distinguish over the prior art.

Applicant responsively cancels apparatus claims 1-16. Applicant amends method claims 17-19 and 22-30. Applicant additionally adds new claims 31-42, which are directed at an

apparatus for cutting a packaged substrate. In addition, Applicant adds new method claims 43-47. Applicant specifically introduces a water jet cutting tool in the main body of independent claim 31 as a distinct component of the claimed apparatus. Applicant submits that the water jet cutting tool is necessarily a positive limitation of the amended claim 31, and therefore must be accorded patentable weight. In addition, Applicant amends method claim 17 to include a step of providing a water jet cutting tool in the main body of the claim. It is also stated in the amended claim 17 that the water jet cutting tool supplies a water jet for cutting the packaged substrate. Applicant submits that the step of providing a water jet cutting tool should be accorded patentable weight. Applicant submits that the added method claim 43 specifically states that at least one of cutting the packaged substrate in the first direction and cutting the packaged substrate in the second direction is performed using a water jet.

Applicant submits that Examiner has already acknowledged that Kazuma does not anticipate an apparatus comprising a water jet cutting tool for cutting of a packaged substrate. In addition, the apparatus of claim 31 comprises additional structural limitations that are not disclosed by Kazuma. More specifically, Kazuma does not disclose an apparatus with a set of transport guides that extends in a first direction between a loading location, a cutting location, and an unloading location. Furthermore, the apparatus of Kazuma does not comprise a first gantry, particularly one that is orientated in a second direction that is perpendicular to the transport guides (i.e. perpendicular to the first direction). Further details with regard to the novel structural features and functions of the claimed invention can be found in the remarks relating to 35 U.S.C. 103 presented below. Kazuma does not disclose a method of cutting a packaged substrate using a water jet, particularly in a manner that includes all limitations of independent claim 17 as amended or of newly added independent claim 43. Accordingly, Applicant submits that the currently added independent apparatus claim 31, the currently amended independent method claim 17, and the currently added independent method claim 43 are not anticipated by Kazuma. Since each of dependent claims 18-19, 22-30, 32-42, and 44-47 depends on one of independent claims 17, 31 and 43, Applicant submits that above dependent claims are correspondingly not anticipated by Kazuma.

Therefore, in accordance with the amendments to the claims and the above response, reconsideration and withdrawal of the claim rejections under 35 U.S.C. 102(b) are respectfully requested.

Response to Claim Rejections Under 35 U.S.C. 103

Examiner has rejected previously pending claims 2-6, 20-23, 27 and 29 under 35 U.S.C. 103(a) as being unpatentable over Kazuma in view of Cole et al (WO 02/35585A1). More specifically, Examiner states that it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the apparatus of Kazuma by adding a water jet cutting tool as taught by Cole. In addition, Examiner has rejected claims 13 to 14 under 35 U.S.C. 103(a) as being unpatentable over Kazuma in view of Itasaka et al (20010043076A1). Examiner states that it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the apparatus of Kazuma by adding the image capture device as taught by Itasaka.

Applicant has considered Examiner's comments. Applicant currently cancels apparatus claims 1-16, amends method claims 17-19 and 22-30, adds apparatus claims 31 to 42, and adds method claims 43-47, taking into consideration Examiner's comments. Applicant submits that the currently amended claims 17-19 and 22-30, and the currently added new claims 31-47 are non-obvious in accordance with 35 U.S.C. 103 with respect to Kazuma in view of Cole, Kazuma in view of Itasaka, or any one of Kazuma, Cole and Itasaka. Support for the amendments made to the claims can be found in the specification of the present application as filed.

Firstly, Applicant submits that the claimed apparatus of new claims 31-42 is non-obvious over Kazuma in view of Cole, and over either of Kazuma or Cole taken individually. Applicant submits a combination of Kazuma and Cole does not fully disclose or suggest all of the structural elements of the apparatus of new claim 31.

The apparatus of new claim 31 comprises a set of transport guides having a length that extends in a first direction between a loading location, a cutting location and an unloading location, a first movable mount and a second movable mount coupled to the set of transport guides, each of the first and second movable mount comprising a first and second rotatable section respectively, a first gantry extending in a second direction that is perpendicular the first

direction, and a water jet cutting tool coupled to the first gantry and displaceable therealong in the second direction at the cutting location. Applicant submits that support for the set of transport guides extending in a first direction between a loading location, a cutting location and an unloading location can be found at page 8, line 14 to 15 of the application as filed. In addition, support for the first gantry extending in the second direction that is perpendicular the first direction, and the water jet cutting tool displaceable therealong, is found at page 10, lines 12 to 19. The first and second movable mounts, and the first and second rotatable sections, are also described and claimed in the application as filed.

Applicant submits that neither Kazuma nor Cole discloses an apparatus comprising a set of transport guides extending between a loading location, a cutting location, and an unloading location. In addition, neither Kazuma nor Cole discloses a first movable mount and a second movable mount that are coupled to the set of transport guides and displaceable therealong. Examiner has stated that the transport guide of original claim 7 and 8 of the present application is anticipated by the “at least one transport guide (rail 31)” of Kazuma. However, Applicant submits that at page 5, lines 37 to 39 of Kazuma, it is clarified that “at least one transport guide (31) comprising at least a pair of rails” as referred to by Examiner, is actually a length of rail that bridges the tentative storage area and the boarding area, with a carrier movable therealong. In addition, Kazuma’s work piece is not cut on this carrier, or on any type of movable mount that travels any length of Kazuma’s rail. Accordingly, it is apparent that the “at least one transport guide (rail 31)” as referred to by Examiner is distinctly different from, and not suggestive of, the set of transport guides of the apparatus as claimed in newly added claim 31.

Furthermore, Applicant submits that the apparatus of each of Kazuma and Cole neither comprises a first movable mount displaceable along the set of transport guides between the loading location and the cutting location nor a second movable mount displaceable along the set of transport guides between the cutting location and the unloading location. Applicant submits that the cutting of a work piece by the apparatus of each of Kazuma and Cole is performed and completed on a single mount or surface. Furthermore, Kazuma teaches that the mount or surface (on which Kazuma’s work piece is cut) is immovable, in contrast to new independent claim 31. Furthermore, it is clearly stated in the newly added dependent claims 33 and 35 that the

packaged substrate is cut when it is on each of the first movable mount *and* the second movable mount of the claimed apparatus. In addition, the packaged substrate is cut in a first direction when on the first movable mount and cut in a second direction when on the second movable mount, the first direction and the second direction being orthogonal, per particular newly added dependent claims.

Furthermore, the apparatus of new claim 38 comprises a distance detector for determining distance between the at least one water jet nozzle and the packaged substrate. In addition, the apparatus of new claim 39 comprises an actuator that enables displacement of the at least one water jet nozzle for adjusting the distance between the at least one water jet nozzle and the packaged substrate. The ability to determine the distance enables maintenance of a predetermined distance, or an optimal distance, between the at least one water jet nozzle and the packaged substrate to ensure reliable and accurate cutting of the packaged substrate. Applicant submits that a device for measuring distance between the water jet nozzle and the entity being cut is neither disclosed nor suggested by either of Kazuma or Cole. In addition, Applicant submits that the apparatus of new claims 40 and 41 comprises a first and second image capture device respectively. Applicant submits that the above claim elements are neither disclosed nor suggested by either of Kazuma or Cole. Accordingly, the claimed apparatus of each of new dependent claims 38-41 is non-obvious over Kazuma in view of Cole, and non-obvious over either of Kazuma or Cole.

Applicant submits that the claim limitations specified by new claims 31-42 are neither disclosed nor suggested by either of Kazuma or Cole. Accordingly, based on Kazuma in view of Cole, a person having ordinary skill in the art would not have been able to arrive at the apparatus of new independent claim 31, even with the benefit of hindsight. Since the apparatus of new independent claim 31 is non-obvious over Kazuma in view of Cole, or over either of Kazuma or Cole, dependent claims 32-42 are necessarily non-obvious over Kazuma in view of Cole, or over either of Kazuma or Cole.

Applicant also submits that currently amended method claims 17-19 and 22-30 and new method claims 43-47 are non-obvious over Kazuma in view of Cole, or over either of Kazuma or Cole. Applicant submits that currently amended method claims 17-19 and 22-30 and new method

claims 43-47 correspond to the new apparatus claims 31-42. Accordingly, the above submissions in support of non-obviousness of the claimed apparatus can be similarly applied to the claimed method of amended claims 17-19 and 22-30 and new claims 43-47. More specifically, Applicant submits that neither Kazuma nor Cole discloses or suggests a method for cutting a packaged substrate comprising transferring a first movable mount between a loading location and a cutting location and transferring a second movable mount between the cutting location and an unloading location, wherein the packaged substrate is cut in a first direction and a second direction when at the cutting location. In addition, neither Kazuma nor Cole discloses or suggests cutting *as well as* transfer of a packaged substrate on the *same* movable mount. Accordingly, no combination of Kazuma and Cole discloses, suggests, or otherwise results in a system capable of the claimed method of independent method claims 17 and 43, and correspondingly the claimed method of claims 17 and 43 are non-obvious over Kazuma in view of Cole, and over either of Kazuma or Cole. Correspondingly, the dependent method claims 18-19, 22-30 and 44-47 are non-obvious over Kazuma in view of Cole, and over either of Kazuma or Cole.

Secondly, Applicant submits that the claimed apparatus of new claims 31-42 are non-obvious over Kazuma in view of Itasaka, and non-obvious over either Kazuma or Itasaka taken individually. Applicant submits that a combination of both Kazuma and Itasaka does not fully disclose or suggest the claimed apparatus of new claims 31-42.

The apparatus of Itasaka is used for testing semiconductor devices and comprises an image capture device. However, unlike the apparatus of the new independent claim 31, the apparatus of Itasaka fails to include a set of transport guides extending in a first direction between a loading location, a cutting location, and an unloading location. In addition, the apparatus of Itasaka does not comprise a first movable mount and a second movable mount coupled to the set of transport guides and displaceable therealong. Furthermore, the apparatus of Itasaka does not comprise a first gantry extending in a second direction, the second direction being perpendicular the first direction. Finally, the apparatus of Itasaka does not comprise a water jet cutting tool coupled to the first gantry and displaceable therealong in the second direction at the cutting location. It is apparent that the apparatus of Itasaka is structurally significantly different from the claimed apparatus of new claims 31-42. Per Applicant's previous

remarks in relation to Kazuma, Applicant submits that the apparatus of new claims 31-42 is non-obvious over Kazuma in view of Itasaka, as well as non-obvious over either of Kazuma and Itasaka.

Applicant submits that the apparatus of Kazuma is so different from the claimed invention that a person having ordinary skill in the art would not have thought to use the disclosure of Kazuma as a reference. In addition, Applicant submits that a person having ordinary skill in the art would not have combined the teachings of Kazuma and Cole. Likewise, Applicant submits that a person having ordinary skill in the art would not have combined the teachings of Kazuma and Itasaka. This is because of the different structures, uses and applications of each of the disclosures of Kazuma, Cole and Itasaka. The apparatus of Cole is specifically used for cutting irregularly shaped dice from a wafer such as a planar light-wave circuit device, the apparatus of Itasaka is used for testing semiconductor devices, while the apparatus of Kazuma is used for cutting, and transferring of, pellets from a work piece. The claimed invention is designed for in-line manufacturing, whereas the apparatuses of Kazuma, Cole and Itasaka are largely configured and implemented as standalone apparatuses that are structurally different from the claimed invention. It is evident that the apparatus of Kazuma, Cole and Itasaka are meant for use in very different manufacturing conditions and a person having ordinary skill in the art would not have made use of any combination of such disclosures to arrive at the claimed invention. Even with the benefit of hindsight, no combination of Kazuma, Cole and/or Itasaka teaches, suggests, or otherwise results in the claimed invention.

In summary, Applicant submits that the new apparatus claims 31-42 are non-obvious over Kazuma in view of Cole, Kazuma in view of Itasaka, and any of Kazuma, Cole and Itasaka taken individually. The currently amended method claims 17-19 and 22-30, and new method claims 43-47 correspond to the newly added apparatus claims 31-42. Accordingly the above submissions in support of non-obviousness of the claimed apparatus can be similarly applied to the claimed method. Applicant submits that the currently amended claims 17-19 and 22-30 and the newly added claims 31-47 are non-obvious over any combination of the cited references.

Therefore, in accordance with the amendments to the claims and the above response, reconsideration and withdrawal of the claim rejections under 35 U.S.C. 103 are respectfully requested.

CONCLUSION

In light of the foregoing amendments and remarks, amended claims 17-19 and 22-30, as well as new claims 31-42 and 43-47, are now in condition for allowance. Reconsideration and allowance are hereby respectfully requested. Applicants respectfully request reconsideration and that a timely Notice of Allowance be issued in this case. In the event that an extension of time is necessary to allow for consideration of this paper, such extensions are hereby petitioned under 37 C.F.R. § 1.136(a), and any fees required (including fees for net addition of claims) are hereby authorized to be charged to Conley Rose, P. C.'s Deposit Account No. 03-2769 for such fees.

Respectfully submitted,

/Jonathan M. Harris/

Jonathan M. Harris
PTO Reg. No. 44,144
Conley Rose, P.C.
(713) 238-8000 (Phone)
(713) 238-8008 (Fax)
ATTORNEY FOR APPLICANTS